

REMARKS

In the office action mailed September 13, 2006, Claims 1, 4-13, 27, and 30-47 were pending in the present application. By the present amendment, Claims 1 and 27 have been amended and Claim 48 has been added. Therefore, Claims 1, 4-13, 27, and 30-48 remain pending for consideration in the present application.

The Examiner rejected Claims 1, 4-13, 27, 30-33 and 37-45 under 35 U.S.C. § 103(a) as allegedly obvious over Bruxvoort et al. (U.S. Patent 5,219,462) in view of Homola (US 20040096705) and Boyd et al. (U.S. Patent No. 6,495,464). Claims 34-36 as applied to Claim 27 were also rejected as allegedly obvious over Bruxvoort in view of Homola and Boyd and further in view of JP 11-333706. Claims 46 and 47 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Bruxvoort et al. in view of Homola and Boyd and further in view of Bruxvoort et al. (U.S. Patent No. 5,958,794). Each rejection will be addressed in turn below.

Comments and Support for New Claim

No new matter has been introduced by the present amendment. Claims 1 and 27 have been amended to specify that the substrate is planar. Support for these amendments can be found in FIG. 1 and page 16, line 26 – page 17, line 4. Support for new Claim 48 can be found at page 16, lines 5-11.

Election/Restriction

Applicant notes that previously withdrawn Claims 14-26 were canceled in the immediately previous response. Therefore, these claims are no longer pending.

Rejections Under 35 U.S.C. § 103(a)

The standards for establishing a *prima facie* case of obviousness were presented in a previous response. With this in mind, Applicant contends that the cited references fail to make a *prima facie* case of obviousness in that the cited references fail to teach or suggest all of the claim limitations of Applicant's invention and that the references teach away from the proposed combination with Boyd.

Bruxvoort in view of Homola and Boyd

Claims 1, 4-13, 27, 30-33 and 37-45 were rejected as allegedly obvious over Bruxvoort in view of Homola and Boyd. Applicant respectfully submits that the amended claims are patentable over the cited references for the reasons set forth previously and those reasons outlined below, and requests that the rejections be withdrawn.

Lack of Each and Every Element

Independent Claims 1 and 27 have been amended to recite that the substrate is "planar." In accordance with the present invention, the substrate merely provides a "mechanical support surface" (page 16, lines 27-28) upon which the projections are formed entirely by the slurry. As can be seen in FIG. 1, the substrate is an essentially planar layer which includes the polishing layer on top.

In contrast, the cited references fail to teach or otherwise provide individually, and in combination, a fixed abrasive tool including a substrate which is planar as claimed. Specifically, Bruxvoort requires the use of recesses in an embossed backing sheet which are filled with an abrasive slurry having an expanding agent. During use, the expanding agent is activated and forms the projections while being secured within the recesses and expanding outward above the recesses. Clearly, the embossed backing sheet in Bruxvoort is not a planar substrate, but rather requires recesses in all embodiments. Homola is completely silent regarding the topography of any substrate

and is focused on the use of loose nanoparticle abrasives in a polishing slurry. Similarly, Boyd teaches substrates which include projections formed integrally therein as shown in FIG. 2 and described throughout. The abrasive portion is then formed as a relatively thin coating over the “patterned substrate.” Thus, Boyd teaches a highly non-planar substrate which is nearly the reverse from Bruxvoort, i.e. projecting features versus recesses. Therefore, none of the cited references teaches a planar substrate as claimed. As such, a *prima facie case* of obviousness cannot be sustained and the rejection should be withdrawn.

Teaching Away

In addition to the lack of any teaching regarding a “planar substrate,” the Boyd reference actually teaches away from the proposed combination of references. According to MPEP §2145(D)(2), “it is improper to combine references where the references teach away from their combination.” Applicant respectfully submits that Boyd teaches away from combination with Bruxvoort. In particular, Bruxvoort teaches that the “abrasive composite member be provided only in and above the recesses.” Col. 7, lines 23-32. This passage also explains that excess slurry can be removed by scraping the substrate clean between recesses. Further, throughout the specification the recesses are spaced apart and no mention of continuous layers can be found. In fact, Bruxvoort through the above mentioned placement of abrasive composites “only in and above recesses” and other teachings throughout Bruxvoort, a continuous layer would be contrary to the teachings provided therein. For example, Bruxvoort teaches that “areas free of abrasive composite members” is beneficial for many reasons. See col. 5, lines 7-29. Specifically, Bruxvoort asserts that the “presence of the areas free of abrasive composite members...tends to reduce the amount of loading,” provides improved swarf removal, and “tends to make the resulting abrasive article more flexible.”

Id. All of these passages specifically reinforce the teaching of Bruxvoort that the abrasive composites are segregated and should not be continuous. Therefore, this passage and the specification of Bruxvoort explicitly, and as a whole, teach away from forming a continuous layer of the abrasive as taught by Boyd. Therefore, the combination of Bruxvoort with Boyd is improper and cannot be sustained.

The combination of Bruxvoort, Homola and Boyd fails to teach or suggest each and every element of the claimed invention and Bruxvoort clearly teaches away from a combination with Boyd. Therefore, Applicant respectfully requests that the rejection based thereon be withdrawn.

Bruxvoort in view of Homola and Boyd further in view of JP 11-333706

Claims 34-36 were rejected as allegedly obvious over Bruxvoort in view of Homola and Boyd and further in view of JP 11-333706 (Kazuto). Applicant respectfully submits that the amended claims are patentable over these references. Specifically, the same distinctions apply to this rejection as with the previously discussed rejection. Further, Kazuto provides no additional teaching or suggestion to provide a polishing layer which is continuous rather than discrete and isolated projections. Therefore, Applicant respectfully submits that the cited references fail to render the claimed invention obvious. Accordingly, Applicant requests that the rejections be withdrawn and the claims passed to issue.

Bruxvoort in view of Homola and Boyd further in view of U.S. Patent 5,958,794

Claims 46 and 47 were rejected as allegedly obvious over Bruxvoort in view of Homola and Boyd and further in view of U.S. Patent No. 5,958,794 (Bruxvoort '794). Applicant respectfully submits that the amended claims are patentable over these references. Specifically, the same distinctions apply to this rejection as with the previously discussed rejection. Further, Bruxvoort

'794 provides no additional teaching or suggestion to provide a planar substrate or a polishing layer which is continuous rather than discrete and isolated projections. Therefore, Applicant respectfully submits that the cited references fail to render the claimed invention obvious. Accordingly, Applicant requests that the rejections be withdrawn and the claims passed to issue.

New Claim 48

New Claim 48 specifies that “the organic matrix further includes an organic binder and a softening agent.” Applicant asserts that new Claim 48 is patentable over the cited references. Specifically, nothing in any of the references teaches or suggests that the organic matrix can include a separate component from the primary binder portion which acts as a softening agent. The purpose of the softening agent is to “adjust the rate of erosion of the organic matrix” during use. Although some combinations of organic binder and polishing liquid will erode the matrix, the presence of a softening agent can be chosen and specifically designed to achieve a much greater degree of control of the matrix erosion rates. Therefore, Claim 48 is also patentable over the cited references for the reasons outlined and those discussed above in connection with other claims.

CONCLUSION

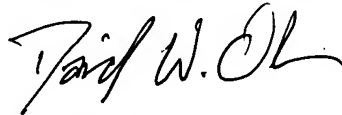
In view of the foregoing, Applicant believes that presently pending Claims 1, 4-13, and 27-48 present allowable subject matter and allowance is respectfully requested. If any impediment to the entry of this Amendment and allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone Mr. Erik Ericksen, or in his absence, the undersigned attorney, at (801) 566-6633, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 20-0100.

Dated this 28 day of December, 2006.

Respectfully submitted,

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